Marine Mammal Research Along the Northern Coast of Washington

Patrick J. Gearin
NOAA, National Marine Fisheries Service

Steven J. Jeffries
Washington State Department of Fish and Wildlife

Kirt M. Hughes
Makah Fisheries Management Division

Merrill E. Gosho
National Marine Mammal Laboratory

The National Marine Mammal Laboratory in cooperation with the Makah Indian Tribe, Washington State Department of Fish and Wildlife and other agencies has conducted research on marine mammals along the northern Washington coast for several decades. Research has focused on assessments of marine mammal species both inshore and offshore to determine abundance, distribution, seasonal usage, food habits and level of fishery interactions. Specific studies have been conducted on harbor porpoise, *Phocoena phocoena*; Gray whales, *Eschrichtius robustus;* Harbor seals, *Phoca vitulina*; Steller sea lions, *Eumetopias jubatus*; and California sea lions, *Zalophus californianus* on the northern coast in the area included within the Olympic Coast National Marine Sanctuary (OCNMS). The OCNMS contains a diverse and rich feeding habitat for these species and also provides resting and hauling sites for the pinnipeds on offshore rocks and islands. The species of marine mammals considered here are all considered healthy in respect to their population levels within the area. Approximate estimates of peak abundance for the species within the OCNMS are; harbor seals ->5,000, Steller sea lions-1,200, California sea lions->5,000, Harbor porpoise->3,000, and Gray whales-200-300 (during migration peaks). Although some of these species are subject to either tribal harvests or fishery-related mortality, the levels are not considered to be excessive or likely to cause any immediate harm to the local populations. Of more immediate concern is to determine the relationship between these species and their primary prey in the region, especially prey species that are listed under the Endangered Species Act, depleted, or heavily exploited by commercial fisheries.

More

Breeding Phenology and Diet of Caspian Terns in Southern Puget Sound, Washington

C.W. Thompson
Washington State Department of Fish and Wildlife

A.E. Edwards and E.R. Donelan
University of Washington

D. Norman
Natural Resources Consultants

M. Tirhi
Washington State Department of Fish and Wildlife

Caspian Terns, *Sterna caspia*, are large gull-like birds that feed exclusively on small forage fish. In recent years, their population size has exploded to more than 25,000 in the Pacific Northwest, where annually they eat many millions of federally protected juvenile salmonids in the Columbia River and elsewhere. Effective management of salmon requires balancing the negative impacts on terns of certain salmon management activities against the benefits of these activities to salmon. Three steps toward this goal are: (1) determining what percentage of the diet is composed of salmonids at each tern breeding colony; (2) estimating tern abundance and productivity at each colony; and (3) identifying potential breeding sites at which the impact on salmonids might be reduced. Caspian Terns have been breeding at the former ASARCO smelter site along Commencement Bay in southern Puget Sound since at least 1997. In summer 2000, a maximum of 2000 to 2500 adults occupied the ASARCO site, many of which successfully fledged young. Adults appear to feed more salmon to their young than they eat themselves. Overall, more than half their diet is composed of salmonids, the other major prey items being surf smelt, Pacific herring and shiner perch.

Herons and Eagles and Crows, Oh My! Causes of Abandonments at Great Blue Heron Colonies

Donald M. Norman
Norman Wildlife Consulting

Amy Stabins
University of Washington

Michelle Tirhi
Washington State Department of Fish and Wildlife

An increase in colony abandonments at many heron nesting sites throughout Puget Sound and the Strait of Georgia has re-focused efforts again on the issue of disturbance, as well as locating and protecting alternate nesting sites for herons. The increase in bald eagles and crow populations has resulted in opportunistic interaction between the three species in which heron egg predation by crows occurs during early season incursions into heron colonies by eagles. Complete lack of chick production has led to concerns about possible population decline. A new project has been funded to use the aerial PSAMP monitoring of heron foraging sites during their peak use of eelgrass beds in June as method to document population independent of nesting colonies.

Heron colonies and foraging areas within the Urban Growth Boundaries in Puget Sound continue to face development pressures. Detailed colony surveys were performed during the summer of 2000 and foraging areas in the winter. Monitoring of large colonies at Renton, Kenmore, and Issaquah has resulted in questions about the role that prey abundance plays in colony success and abandonment at freshwater colonies. New studies on disturbance and productivity will also be presented.